

EMBARGED FOR RELEASE
Monday, May 19, 2014
10 am EDT

Contact: NIDA Press Office
301-443-6245
media@nida.nih.gov

2014 Avant-Garde Awards focus on strengthening the immune system

NIH's HIV/AIDS research awards offer hope in battling HIV infection and improving long-term outcomes in HIV-infected drug users

With proposals ranging from enhancing the immune system's ability to fight HIV infection to improving long-term immune health in HIV-infected drug users, three scientists have been chosen to receive the 2014 Avant-Garde Award for HIV/AIDS Research from the National Institute on Drug Abuse (NIDA), part of the National Institutes of Health. The three scientists, Drs. Stephen Waggoner, Heinrich Gottlinger, and Melanie Ott, will each receive \$500,000 per year for five years to support their research. NIDA's annual Avant-Garde award competition, now in its seventh year, is intended to stimulate high-impact research that may lead to groundbreaking opportunities for the prevention and treatment of HIV/AIDS in drug users.

Awardees are:

Stephen Waggoner, Ph.D., Cincinnati Children's Hospital Medical Center

Project: A revolutionary vaccine approach to prevent HIV infection in substance abuse

Dr. Waggoner's group will play an important role in the ongoing science of HIV vaccine development. His project will focus on preventing natural killer cells from destroying activated helper CD4 cells, to strengthen vaccine effectiveness. The CD4 helper cells support the functioning of the immune system against infections, including HIV. A vaccine that enhances the immune system's long-term ability to resist infection could enhance the antibodies against HIV and delay progression to AIDS in vulnerable populations. This will be particularly valuable among drug users who are much less likely to be treated and to have some of the worst outcomes.

"Millions of people, including those with substance use disorders, would benefit from the development of an effective HIV vaccine," said Waggoner. "This award will permit our group to pursue a revolutionary vaccination approach designed to overcome natural roadblocks imposed by the immune system in order to prevent new HIV infections."



Dr. Jacques Normand describes the 2014 NIDA Avant-Garde awards



Dr. Stephen Waggoner

Heinrich Gottlinger, M.D., University of Massachusetts Medical School, Worcester

Project: Mechanism of HIV cell-cell transmission of relevance to substance users

Dr. Gottlinger will explore the roles of two specific proteins involved in HIV's movement from an infected to an uninfected cell. Because this route of infection allows HIV to evade the immune system's antibodies, a clearer understanding of this process can inform new strategies to prevent HIV and slow HIV disease progression. Such strategies could be especially relevant for injection drug users, who may be exposed to HIV through sharing syringes that contain infected cells.



Dr. Heinrich Gottlinger

"HIV transmission via direct cell-to-cell contact is vastly more efficient than the transmission of cell-free virus, and could contribute substantially to the transmission of HIV by blood contact, as may occur among injection drug users. The Avant-Garde award provides us with a unique opportunity to explore in detail how certain cellular pathways are exploited by HIV to move from one cell to another so efficiently," said Gottlinger. "We hope that the planned research will yield translational insights into how to block this important mode of transmission and thus benefit all patients infected with HIV, especially substance users."

Melanie Ott, M.D., Ph.D., Gladstone Institutes, San Francisco

Project: A new model of accelerated immune aging in HIV-infected drug users

Dr. Ott will investigate the role of an enzyme (SIRT-1) in slowing accelerated immune aging resulting from either long-term HIV infection or regular drug use. Because SIRT-1 appears to protect against overworked immune activation that can eventually exhaust immune cell functions, new therapies aimed at this enzyme could delay immune aging and its related health risks in HIV-infected drug users.



Dr. Melanie Ott

"The goal of our research is to transform our understanding of how HIV and drug abuse affect the immune system and the aging process," Ott said. "We hope to identify novel links between HIV, abused substances and the biological pathways of aging that lead to potential therapeutic strategies to slow the accelerated immune aging in this patient population."

"These innovative approaches can shed light on mechanisms through which HIV damages or circumvents the immune system, and how these effects interact with those of drugs of abuse" said NIDA Director Nora D. Volkow, M.D. "By learning more about these underlying processes, not only might this research slow the progression and transmission of HIV infection, but it could improve the long-term health of those already infected."

These awardees were among the many applicants whose proposals reflect diverse scientific disciplines and approaches to HIV/AIDS research. The Avant-Garde Awards are modeled after the NIH Pioneer Awards and are granted to scientists of exceptional creativity who propose high-impact research that could open new avenues for prevention and treatment of HIV/AIDS among drug abusers.

For information about NIDA's AIDS Research Program, including the [Avant-Garde Award Program for HIV/AIDS Research](#), go to www.drugabuse.gov/AIDS.

Waggoner, Gottlinger, and Ott are funded under grant numbers DA038017, DA038034 and DA038043, respectively.

###

The National Institute on Drug Abuse is a component of the National Institutes of Health, U.S. Department of Health and Human Services. NIDA supports most of the world's research on the health aspects of drug abuse and addiction. The Institute carries out a large variety of programs to inform policy and improve practice. Fact sheets on the health effects of drugs of abuse and information on NIDA research and other activities can be found on the NIDA home page at www.drugabuse.gov, which is now compatible with your smartphone, iPad or tablet. To order publications in English or Spanish, call NIDA's DrugPubs research dissemination center at 1-877-NIDA-NIH or 240-645-0228 (TDD) or fax or email requests to 240-645-0227 or drugpubs@nida.nih.gov. Online ordering is available at <http://drugpubs.drugabuse.gov>. NIDA's media guide can be found at <http://drugabuse.gov/mediaguide/>, and its new easy-to-read website can be found at www.easyread.drugabuse.gov.

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov.

NIH...Turning Discovery Into Health[®]